

VIRGINIA'S COMMERCIAL FISHING: BEYOND THE BAY

A report on the value of Virginia's
ocean-caught fisheries

Photo by Aileen Devlin | Virginia Sea Grant



Virginia Coastal Zone
MANAGEMENT PROGRAM



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INTRODUCTION

Virginians hear a lot about the Chesapeake Bay, and the value of clams, oysters, and blue crabs, but they may be much less familiar with the bounty of economic and environmental riches of the Atlantic Ocean waters just offshore. The dynamic environment off the coast of Virginia is more than just open ocean, it is also made up of several different kinds of habitats, such as nearshore seaside bays, the sandy continental shelf with its sparse hard bottom, and deep submarine canyons (*shown below*), all of which support a rich diversity of marine life.

Virginia's coastal environment is both ecologically and economically valuable. In addition to providing diverse habitats for marine wildlife, the area also supports a wide range of human uses, including commercial and recreational fishing, offshore renewable energy, aquaculture, shipping, military exercises, sand mining, marine research, and recreation. As new uses for the offshore area are considered, their potential impacts to Virginia's commercial fishing should also be considered.

Commercial and recreational fishing industries generate millions for Virginia's economy each year. According to the Virginia Seafood Council, the Commonwealth's approximately 6,000 commercial fishermen and crew may travel just a few miles offshore or hundreds of miles to fish off of New England before heading back to their home ports in the Commonwealth. They harvest more than 50 commercially valuable species, including Atlantic sea scallops, Atlantic menhaden, Atlantic striped bass, summer flounder, Atlantic croaker, conch, and black sea bass.

The most recent National Oceanic and Atmospheric Administration (NOAA) [Fisheries of the United States, 2018 report](#)¹ compiles key fisheries statistics and provides valuable insights into the productivity of the nation's top fishing ports. Virginia ranks as the highest seafood production state on the East Coast and is the nation's fourth largest producer of marine products, with total landings of 362.5 million pounds in 2018 and is only out paced by Alaska, Louisiana, and Washington.¹

In 2018, Reedville, Virginia was the fifth largest U.S. fishing port based on volume of seafood landed and Hampton Roads was the nineteenth wealthiest seafood port in the nation.¹



Image courtesy of NOAA-OER/BOEM/USGS



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1. National Marine Fisheries Service (2020) Fisheries of the United States, 2018. U.S. Department of Commerce, NOAA Current Fishery Statistics No. 2018 Available at: https://media.fisheries.noaa.gov/dam-migration/fus_2018_report.pdf

Warming waters and increasing coastal storms, coupled with human-induced impacts, such as offshore renewable energy and increases in shipping, create a new generation of challenges and urgency for responsible and sustainable management. Virginia and other Mid-Atlantic states are committed to embracing new comprehensive, regional approaches to successfully address these challenges, and to ensure that future generations can enjoy healthy and productive ocean ecosystems.

The Virginia Coastal Zone Management ([CZM](#)) Program works every day to protect the state's coastal resources, which include coastal and ocean waters, beaches, sand dunes, barrier islands and wetlands as well as the industries and livelihoods that depend on them. Having a federally approved CZM Program authorizes Virginia to require that federal actions in, or affecting, Virginia's coastal zone are consistent with state laws and enforceable policies approved by NOAA and incorporated into the CZM Program.

Together, Virginia's coastal localities, state agencies and NOAA form an effective intergovernmental partnership. Virginia is an active member of the Mid-Atlantic Regional Council on the Ocean ([MARCO](#)) which includes representatives of the five mid-Atlantic states from Virginia to New York. Virginia is also an active member of the Mid-Atlantic Committee on the Ocean ([MACO](#)) that includes the federal partners, MARCO states, federally recognized tribes, and the Mid-Atlantic Fishery Management Council. These organizations help to coordinate communications and develop tools to assist with ocean management as changes in ocean use take place over time.

The Virginia CZM Program office administers an annual grant of approximately \$3 million from NOAA to accomplish its goals. Since 1986, Virginia has received over \$89 million in federal Coastal Zone Management Act funding, matched by over \$73 million in state and local funds, to implement its CZM Program. In September 2018, Governor Ralph Northam signed a Transmittal Letter to NOAA that continues the program in perpetuity.



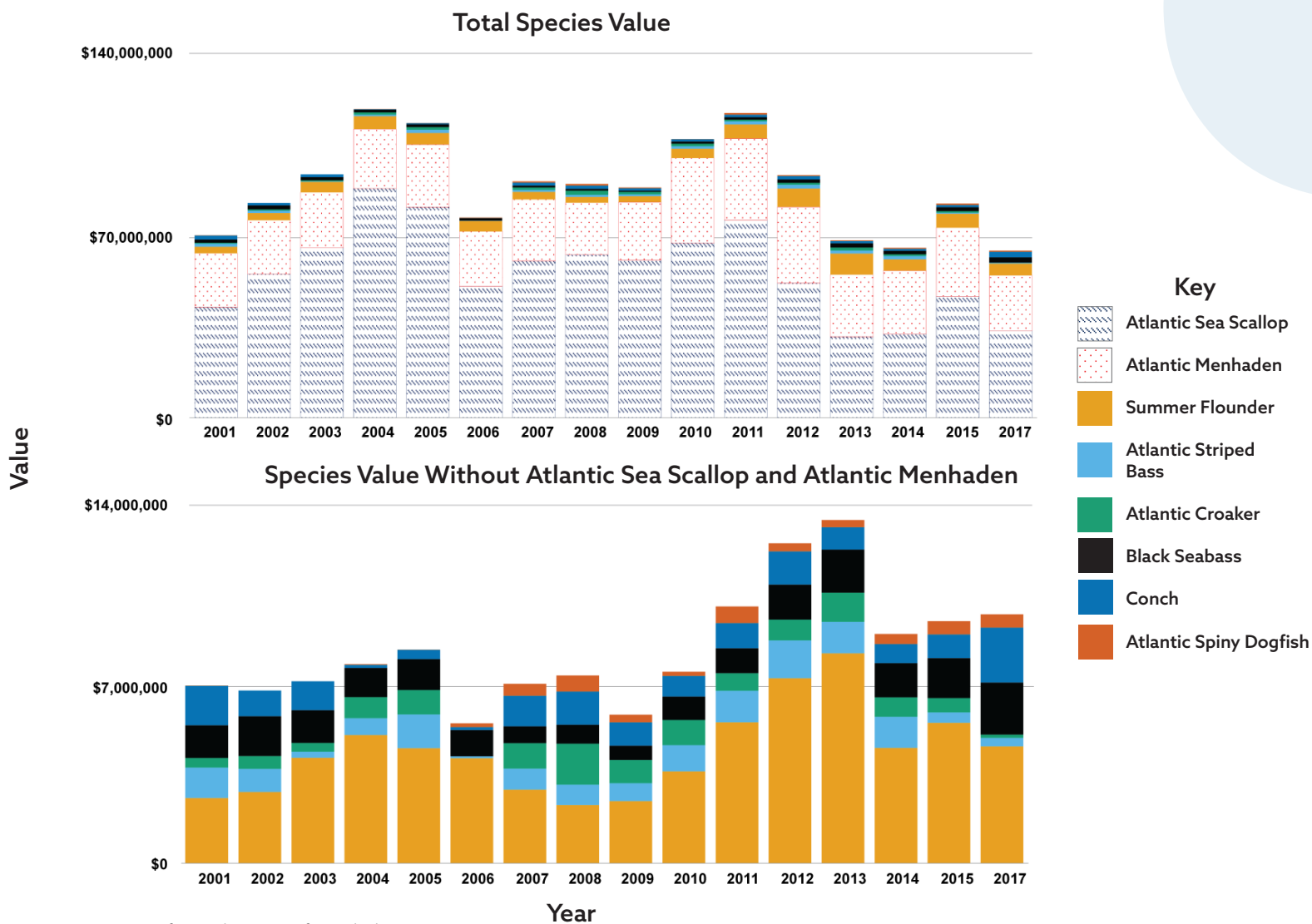
Virginia's ports for Atlantic-caught species

OBJECTIVE

THIS DOCUMENT HIGHLIGHTS THE VALUE AND IMPORTANCE OF PROTECTING VIRGINIA'S OCEAN FISHERIES AND HABITATS TO THE COMMONWEALTH'S ECONOMY.

THE VALUE OF VIRGINIA'S MOST COMMERCIALY IMPORTANT OCEAN-CAUGHT SPECIES

Commercial fishermen travel from just a few miles offshore to hundreds of miles off New England to fish before heading back to their home ports in Virginia. This section summarizes landing information on some of Virginia's most important commercial species caught beyond the Chesapeake Bay, from the mean low water (MLW) mark to 200 nautical miles offshore in the Atlantic Ocean. Hard clams and oysters have been excluded from these data because they are not typically considered ocean-caught species. These data were derived from both the Virginia Marine Resources Commission and NOAA landings, removing those values associated with the Chesapeake Bay to arrive at the value of species caught in the Atlantic, except for the value of conch*. The first graph below shows the combined value of some of Virginia's most commercially important species caught in the Atlantic Ocean from 2001-2015, and 2017. The second graph shows the same data as the first, but without the values of Atlantic sea scallop and Atlantic menhaden to show data for other species in greater detail. The values of Atlantic sea scallops and Atlantic menhaden are orders of magnitude larger than the other species, and emphasize the importance of the fisheries to Virginia.



Virginia's commercial fishermen harvest more than 50 commercially valuable species, including Atlantic sea scallops (*Placopecten magellanicus*), Atlantic menhaden (*Brevoortia tyrannus*), Atlantic striped bass (*Morone saxatilis*), summer flounder (*Paralichthys dentatus*), Atlantic croaker (*Micropogonias undulatus*), and black sea bass (*Centropristis striata*). The species targeted by commercial fishermen vary in terms of where and how they are caught. The information below includes the range, habitat, and techniques used to catch the top species.

ATLANTIC SEA SCALLOP



The Atlantic sea scallop industry is one of the most valuable fisheries for Virginia. Atlantic sea scallops are free-swimming along the sea floor but do not travel long distances. The primary Atlantic sea scallop fishery operates along the coast from the Mid-Atlantic to the Canadian border. The fishery predominantly uses dredges throughout the entire range of the fishery and occasionally uses trawl gear.

ATLANTIC MENHADEN



Atlantic menhaden are small filter feeders found in coastal and estuarine waters from Nova Scotia to northern Florida. Atlantic menhaden support one of the most commercially important fisheries by providing fish meal, fish oil, and bait for other fisheries. They constitute the largest landings, by volume, along the Atlantic Coast of the United States. In estuaries like the Chesapeake Bay, they are an important food source for striped bass and other fish, as well as for predatory birds, such as osprey and eagles.

SUMMER FLOUNDER



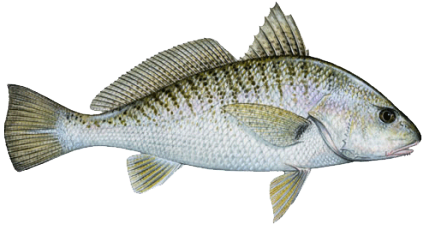
The summer flounder fishery in the U.S. operates from Maine to the North Carolina/South Carolina border. Summer flounder live on sandy ocean bottom habitat, which is more resilient than other habitat types to the impacts of fishing gear. They are mainly caught in bottom trawls, but are also landed using gillnets in estuarine waters.

ATLANTIC STRIPED BASS



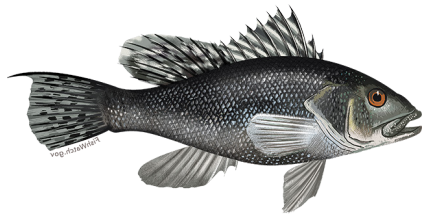
Atlantic striped bass live along the Atlantic Coast from Canada to Florida, and in the Gulf of Mexico from Florida to Louisiana. There is a moratorium on Atlantic striped bass in federal waters. In state waters, the commercial fishery is managed with catch quotas, size limits, gear restrictions, and seasonal closures.

ATLANTIC CROAKER



Atlantic croaker are most abundant from the Chesapeake Bay to northern Florida. The species derives its name from the croaking noises they make during spawning season. It is a bottom dwelling species and prefers sandy or muddy areas in shallow or deep water. Atlantic croaker are targeted using several types of commercial gear including gillnets, trawls, and seines.

BLACK SEA BASS



The black sea bass fishery in the U.S. operates from Maine to Cape Hatteras, North Carolina. Black sea bass are found in association with structured habitats. They migrate offshore and south in the fall, returning north and inshore to coastal areas and bays in spring. The black sea bass fishery predominantly uses trawls or rod and reel, but other gear includes longline, handline, pot, trap, gillnet, spear, and dredge.

CONCH



Conch has become a general term used to describe various large, spiral-shelled molluscs. In this report, conch refers to the combined grouping of channeled whelk, knobbed whelk, and milk whelk. As an evolving fishery that has only recently stabilized, the species value data is based solely on the NOAA/NMFS total landings data for those years. These species are found along the Atlantic coast, from Massachusetts to Florida, in both near- and offshore marine habitats, though mixing is observed inshore along shallow waters of continental shelf. In Virginia, the majority of conch are harvested

by baited pots and traps along the coast in state and federal waters. Conch are exported to China and other countries around the world for consumption and use as bait.

ATLANTIC SPINY DOGFISH



The Atlantic spiny dogfish fishery operates from Maine to Florida and from inshore to offshore waters on the edge of the continental shelf. The Atlantic spiny dogfish fishery uses predominantly bottom gillnets, with lesser amounts caught by trawls and hook gear.

VIRGINIA FISHING GEAR TYPE

Virginia's commercial fishermen use a variety of gear types to harvest and land these species. Below are details on how Virginia's most commercially valuable species are caught and descriptions of the gear used to catch them.

	BOTTOM TRAWL	DREDGE	GILLNET	HOOK & LINE	LONGLINE	POTS & TRAPS	PURSE SEINE
Atlantic Sea Scallop		●					
Atlantic Menhaden							●
Summer Flounder	●		●				
Atlantic Striped Bass				●			
Atlantic Croaker	●		●				
Black Sea Bass	●		●		●	●	
Conch		●				●	
Atlantic Spiny Dogfish	●		●				

BOTTOM TRAWL Bottom trawling is a fishing practice designed to catch fish living at great depths or on the bottom of the sea. A cone-like net herds and captures target species as it is towed along the ocean floor.

DREDGE Dredging is a fishing method in which a dredge is dragged across the sea floor, either scraping or penetrating the bottom. Species are collected in a collection bag attached to the dredge.

GILLNET A gillnet is a wall of netting that hangs in the water column. The mesh sizes are designed to allow fish to get only their head through the netting but not their body. The fish's gills then get caught in the mesh as the fish tries to back out of the net.

HOOK AND LINE Hook and lines are gear where the fish is attracted by a lure placed on a hook fixed to the end of a line where they get caught. Hook and lines may be used singly or in large numbers.

LONGLINE Longline fisheries trail a long line with baited hooks behind a boat. They can be set for pelagic (midwater) or bottom fishing, depending on the target species. Without careful management, longline fisheries can have unintended interactions with non-target fish, seabirds, and other marine life.

POTS AND TRAPS Pots and traps are stationary, submerged three-dimensional wire or wood devices. The size and shape of traps vary, but all feature a cone-shaped entrance tunnel through which the target species can enter, but not escape. Bait is used to lure the target species inside, where they wait until fishermen return to retrieve the catch and re-bait the traps.

PURSE SEINE A purse seine is a large wall of netting deployed around an entire area or school of fish. The seine has floats along the top line with a lead line threaded through rings along the bottom. When a school of fish is located, they are encircled with the net and the lead line is then pulled in, "pursing" the net closed on the bottom, preventing fish from escaping by swimming downward.

SHIFTING FISH COMMUNITIES

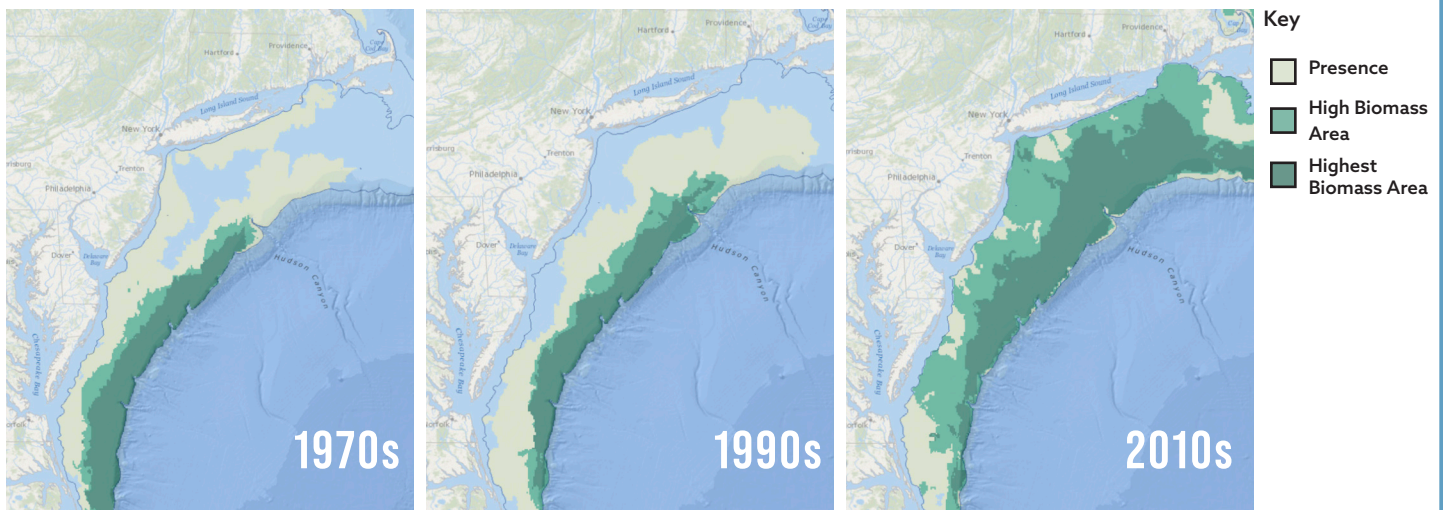
As ocean uses increase, the Mid-Atlantic region will be faced with a new generation of ocean management challenges and opportunities. The ocean environment off of Virginia is vulnerable and dynamic. Several commercially valuable species, their food sources, and their habitats shift in response to pressures ranging from changing climate, ocean uses, fishing pressures, and more. The [Mid-Atlantic Ocean Data Portal](#) is an online tool and resource center, established by the Mid-Atlantic Regional Council on the Ocean (MARCO), that serves as a platform to engage all stakeholders in ocean planning from the five-state Mid-Atlantic region — putting essential data and state-of-the-art mapping and visualization technology into the hands of the agencies, industry, and community leaders.

The **Fish Species Through Time** data series on the MARCO Mid-Atlantic Ocean Data Portal represents an analysis of Northeast Fisheries Science Center (NEFSC) bottom trawl survey data collected over five decades since the 1970's. The data visually displays where 18 commercially and/or recreationally important fish species have consistently been found in high biomass over time and where they might be moving.*

BLACK SEA BASS



Fish populations adjust to environmental and climatological change. For example, black sea bass (*Centropristis striata*), one of the most valuable species caught by Virginia fishermen generally migrate south in the fall. In the warmer months, they are found closer to shore and in coastal areas. Historically, black sea bass were found in higher relative biomass concentrations offshore from North Carolina to New Jersey. In the most recent time periods, however, there has been a significant shift northward, with areas of high relative biomass off Long Island and Cape Cod. These changes pose challenges to fisheries management.



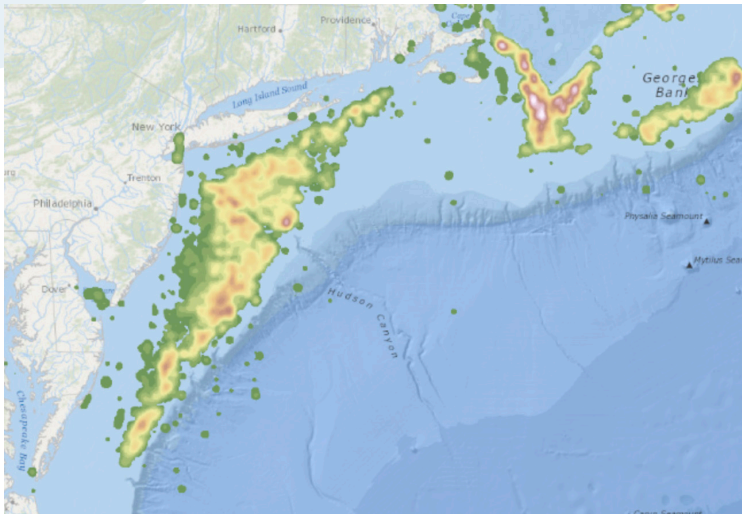
*These data make no assumptions on what factors are causing species shifts. If you are interested in the causation for species shifts, please refer to the most recent [scientific publications](#) on the subject.

COMMUNITIES AT SEA

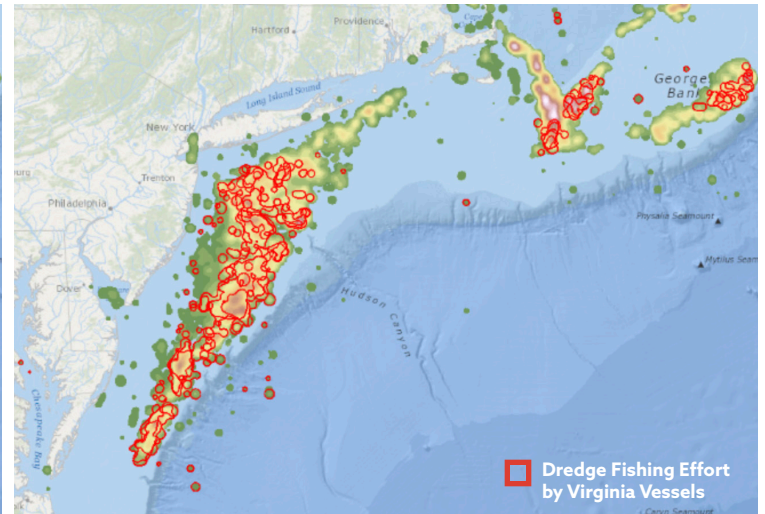
Communities at Sea is a series of data layers available on the MARCO Mid-Atlantic Ocean Data Portal that displays fishing effort as opposed to value or volume. These data create almost 1,000 maps of commercial fishing activity by species and gear type for 200 individual ports along the Atlantic Ocean. The maps help ensure a regional approach to understanding the cumulative impacts of how we use and develop our ocean.

Virginia's most valuable fisheries are caught by dredges. Fishermen travel hundreds of miles to dredge species caught offshore to be landed in Virginia's ports. The Communities at Sea maps on the left display the total fishing activities for the dredge and pots and traps fisheries from 2011-2015 from North Carolina to Massachusetts. The maps on the right show the areas of effort by Virginia's fishermen over that time period. All catches from the outlined areas were landed in Virginia ports. Protecting key locations on the ocean floor ensures Virginia's economic well-being and the success of the commercial fishing industry.

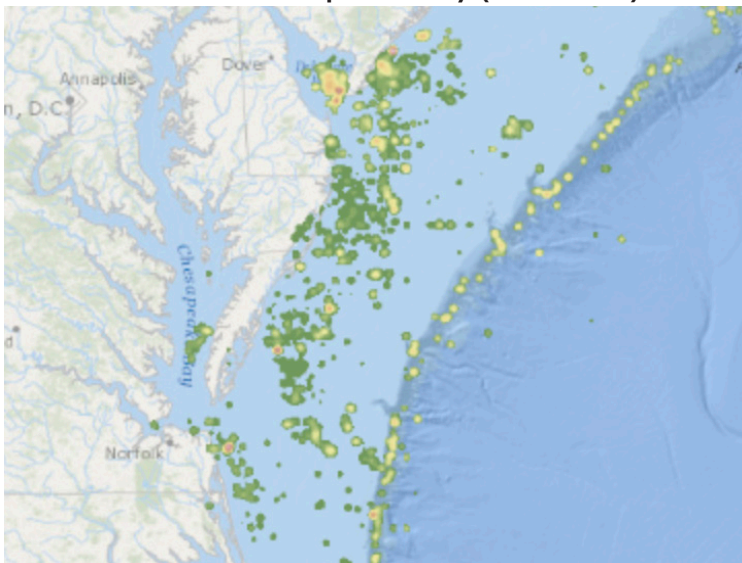
Total Dredge Activity (2011-2015)



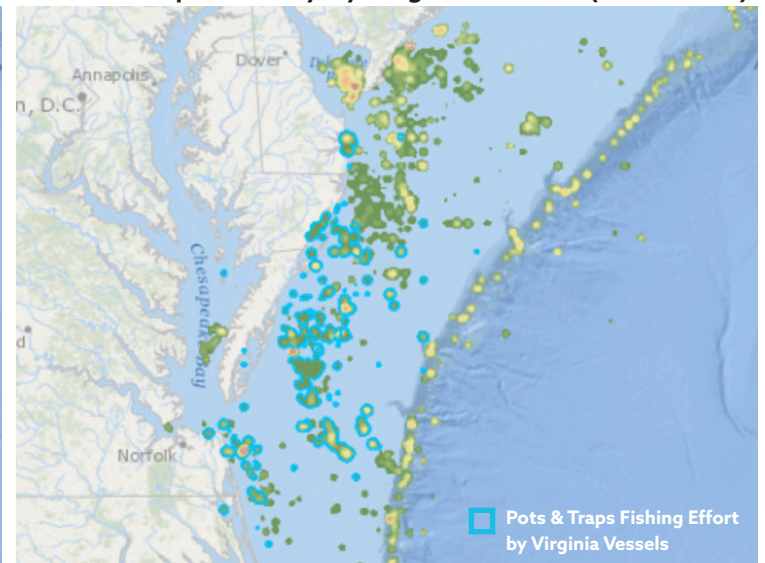
Dredge Activity by Virginia Vessels (2011-2015)



Total Pots & Traps Activity (2011-2015)



Pots & Traps Activity by Virginia Vessels (2011-2015)



Key



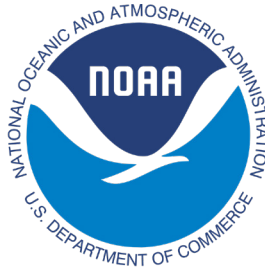
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ACKNOWLEDGEMENTS

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The views expressed herein are those of the author and do not reflect the views of NOAA or any of its subagencies.



Fish images courtesy of [Fish Watch](#).
Report content and design by [Green Fin Studio](#).

FOR MORE INFORMATION AND TO EXPLORE THE DATA

- Mid-Atlantic Ocean Data Portal - <https://portal.midatlanticocean.org/>
- Fisheries of the United States, 2018 report - https://media.fisheries.noaa.gov/dam-migration/fus_2018_report.pdf
- Fisheries Economics of the United States Interactive Tool - <https://www.fisheries.noaa.gov/data-tools/fisheries-economics-united-states-interactive-tool>